

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
5 February 2004 (05.02.2004)

PCT

(10) International Publication Number
WO 2004/011050 A1

(51) International Patent Classification⁷: **A61L 27/12**,
27/42, C01B 25/32

(21) International Application Number:
PCT/SG2003/000179

(22) International Filing Date: 30 July 2003 (30.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/399,938 30 July 2002 (30.07.2002) US

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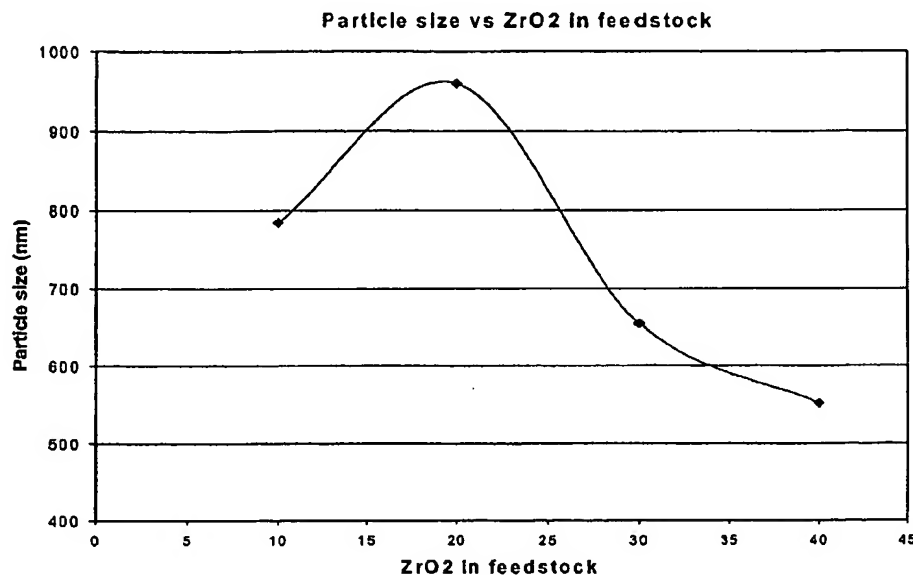
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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

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(54) Title: SPHERICAL NANO-COMPOSITE POWDER AND A METHOD OF PREPARING THE SAME



(57) **Abstract:** The present invention provides a composition and method of producing nano-composite powder consisting essentially of hydroxyapatite(HA) and zirconium oxide (ZrO₂). The method comprises the steps of reacting orthophosphoric acid with calcium hydroxide to form a HA suspension, adding ZrO₂ suspension to the HA suspension to form a composite feedstock, and subjecting the composite feedstock to Radio Frequency (RF) Plasma Spraying to form the nano-composite powder. Quantity of the zirconium oxide suspension added is in the range of 10 to 40 weight % of the composite feedstock. The nano-composite powder comprises 60-90wt% calcium hydroxyapatite, 10-40wt% zirconium oxide and traces of calcium phosphate.

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